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for the health sciences*



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Map of the Austrian-Hungarian territory, showing the extension of the "cordon sanitaire," the "permanent plague cordon," which actually existed for about 150 years. (Photo courtesy of Klaus F. Meyer.)

*The Disinfection of Letters: Defense Measures Against Epidemics**

By Klaus Meyer

Epidemics have plagued mankind for centuries, and efforts to curtail their occurrence and spread have been heroic. Until a few years ago this war on epidemics proved relatively successful for the countries of the Western hemisphere—the word “epidemic” had lost its horror for most people. Today, however, AIDS has proven a grim reminder of how helpless we can be in attempts to combat epidemics—seemingly as helplessly as when our ancestors faced the plague.

Until a few decades ago our knowledge of how epidemics spread was miniscule. There were efforts, however, to diminish the terror of epidemics with methods prevalent at the time, and officials attempted to contain their spread by separating afflicted individuals through quarantine or by fumigating items which had been touched by those people. These methods were of little success, at least until the end of the nineteenth century.

Reports of epidemics in ancient history or the Middle Ages are vague, often because in most cases it is unclear which diseases actually were involved, whether plague, typhoid fever, malaria or others. Any real understanding begins with the development of the modern concept of disease in the sixteenth century, and its eventual incorporation into later scientific thought.¹ Understanding the relation of epidemics to specific diseases is complicated by the fact that several diseases usually were involved at the same time.

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Contemporary descriptions usually do not allow unequivocal classifications. Occurrence of epidemics, however, was almost always related to poor hygiene and the consequence of people living closely together.² Epidemics spread at the beginning of this millennium when the emerging middle classes proliferated and cities grew larger with the influx of tradesmen and settlers from rural areas. The resettled rural poor, living closely together in poor conditions, provided an optimal situation for epidemics, with recurrent breakouts of the plague.³

FIRST MEASURES OF AUTHORITIES AGAINST CONTAGION

A systematic fight against plague began in the fourteenth century in Venice, when the council of Venice founded a sanitary commission consisting of three noblemen. The so-called "Provveditori alla sanita," were charged with the responsibility to develop appropriate countermeasures against the plague. One of these measures was the fumigation with aromatic herbs and woods of so-called "poison-catching goods" to which an inhibiting effect on the "contagion" was attributed.⁴ Indeed, these methods had been utilized in earlier centuries, but now they were ordered for the cleaning of all items suspected of contamination which later also included all letters arriving from plague areas.⁵

Supported by the respective full powers of the Council of Venice, the nobles could enforce not only these and other measures but also show results for their efforts. Such measures included a thirty-day (later a forty-day) containment of trading vessels at an offshore island, the washing and cleaning of wool and other cloth trading goods, the introduction of health passports for travelers from, as the parlance went, "thank God! healthy areas" and much more. Venetian successes in the control of plague practices soon caused other Italian cities to adopt and even expand regulations. Above all, the cleansing of incoming letters from infested areas increased.⁶

As a matter of fact, the precise time when the fumigation of letters began is unclear. There are numerous indications that the origins for disinfection of letters may be in the first regulations of the Venetian sanitary commission, which served as a model for other countries. This opinion is based on the assumption that fumigations for the defense against epidemics, which were already widespread and the origins of which reputedly date back to ancient Egypt, were applied to all materials and objects used daily. Advice to keep the air clean by fumigation and to burn "contaminated" items, to "sharply clean them" with vinegar or to fumigate them,⁷ can be found repeatedly. The same advice was applied to letters from suspicious areas—especially the Orient. The

absence of reports explicitly mentioning letters can be explained by the negligible amount of correspondence during that period. Perhaps the Order of 1493 of the “Supremo Magistrato di Venezia” for all incoming ships, “to fumigate all the maps coming from infected areas or areas under suspicion of infection,” implies the reminder to subject all paper to the usual fumigation procedure. Letters are explicitly mentioned in the order for the establishment of the “Ufficio die Sanita” in Livorno in 1598, the scope of duties of which is outlined at the same time: “The persons on the ships are to be checked for their health condition, quarantine has to be ordered, and the letter packages coming from infected areas are to be fumigated.”⁸

About this same time there were reports of regulations in Prussia which mention letters as possible contagious agents of a raging plague epidemic. In 1549, at the peak of the epidemic, there was an order from the Duke of East Prussia limiting correspondence and allowing only letters delivered by couriers from noninfected areas.⁹ Letters also were mentioned explicitly as agents in one particular health regulation when Duke Georg-Wilhelm transferred his whole domain from Königsberg to Brandenburg (1602) at the peak of a terrible outbreak of plague in this East Prussian city. He strictly ruled out the transfer of letters into the new residence solely “to avoid disturbing and doing harm to our dukely household.”

Protocols of the Munich town council¹⁰ refer to the fumigation of letters during periods of plague. Under the entry dated October 22, 1597 is the notation that Duke Maximilian ordered the mayor “to tell the messengers from infected areas where to go to fumigate the letters with ‘cronwitt’ shrubs.” Unfortunately, the records do not indicate the precise designation of this place. The October 5, 1607 council protocol shows precise regulations for protecting the city against the epidemic raging in the surrounding area:

The mayor reported the orders of the Duke: 1. to shut down the small city-gates; 2. to write Augsburg on the board; 3. to have council members checking the gate keepers by unannounced visits; 4. to have someone also fumigating letters and packages in a house of God. The council proposed D. Pürckhaimer as the fumigator for the court’s mail.

This note in the Munich protocols reveals a few informative details. At the different gates of the city was inscribed information as to which areas were considered infected—the plague was in Augsburg at the time—and the names of the persons whose wares and letters were to be fumigated. This edict apparently held true also for letters which already had been fumigated once at

the border. Because terror of the epidemic was so great, people preferred to fumigate independently. Since the fumigation regulation was applicable to letters for the council and citizens, as well as for the court, a “man of the court” had to be present in addition to a “council member.” Identification of the fumigation procedure itself is not explained in the edict; such a delineation seemed to be uncommon, which is compatible with the general practice of the time. The strange term “house of God” most probably does not designate a church, but rather a clerically-supervised building of public welfare or charity.

This rather incidental material certainly can be supplemented by the study of additional city records. It seems to be factual, however, that in 1600 the fumigation of letters was a general practice in defense measures against epidemics, which flared up repeatedly. The beginning of widespread fumigation of letters is documented in the “Thurn and Taxis” records on the “measures against contagious diseases and horse epidemics in the Imperial Empire Postal System” started in 1607.¹¹ The Imperial Empire Postal System of Thurn and Taxis undoubtedly was the best organized postal system at that time in Europe; it hardly could have avoided an otherwise generally accepted method of letter disinfection. It can be assumed that in Europe the firm of Thurn and Taxis was in the forefront in adopting these measures as binding regulation.

FUMIGATION OF LETTERS FINDS WIDE DISSEMINATION

Until this time (1600), regulations for the fumigation of letters were set sporadically as individual cases arose, but during the seventeenth century stricter measures became more frequent to disinfect goods and letters transported by postal services. It is important to remember that fumigation of letters, wherever it was done, was not an isolated step, but part of increasingly careful efforts for the containment of future catastrophic illness. To mention only a few, these efforts included the cordoning off of infected areas; quarantine measures for persons and goods in transit, and the careful cleansing of these goods; the washing of coins in vinegar; and the proof of origin from an uninfected area through the use of “health passports.” The increasing importance of the fumigation of letters can be explained by the growing importance of letters as a means of communication during the seventeenth century, mainly in the period of prosperity following the Thirty Years War.

How fumigation was handled in practice is evident from the report of a postal clerk named Hauptvogel, who worked at the court post office in Dresden

in 1713. The report describes in detail the defense measures of the Electorate Saxon Post Office in the plague year 1680:

When the contagion was raging in 1680, the fumigation of letters and mail has been handled as follows: 1) At the border the letter bag and other packages are fumigated by a specially designated official whose work it is to fumigate the sealed letter bag and other packages. 2) When the mail arrives the guard reports it to the post office, and the postmaster goes with an errand boy or mailman to the gate; and 3) the mailman fumigates the letter bag; and also 4) the other packages before they are opened. 5) After opening the packages, the officials put the letters into a pan made for that purpose and the letters are fumigated. 6) Fumigation pans and kettles belonging to these officials have been placed at the outer gates. 7) Camphor powder has been approved by the Electoral Highness for that purpose. Furthermore, 8) slow-matches should be burnt at the site of fumigation, around the windows and the doors, and the mailmen occasionally are requested to smoke tobacco also. 9) Each clerk has received one can of medicated wine a day for his well-being. 10) Likewise, the coins are thrown into two cans of vinegar. The window of the post office has been boarded up so as to prevent passersby from coming too close to the window. Money to be fumigated is placed onto a board made for that purpose and thrown into the above-mentioned vinegar. The townspeople are not allowed to approach even the window, let alone think of entering the house. 11) Preservative electuary and similar necessities were well applied, 12) likewise juniper wood and berry for fumigation.¹²

TRANSPORTATION OF LETTERS IN THE SEVENTEENTH CENTURY

This report from the period makes clear the degree of control exerted by postal authorities over the mail: not even 200 years earlier had the transportation of letters been dependent upon the power of a single official. According to origin and need, these official messengers either were permanently employed by several large commercially important towns or regularly paid and bonded Imperial or sovereign couriers. These couriers of course occasionally could take along private letters. There were also so-called casual errand boys, meaning reliable journeymen or monks, who on their wanderings could deliver letters to addressees.¹³ This method, however, could not suffice for Emperor Maximilian I, who, as a result of inheritance, conveyance and the politics of marriage, had to administer an empire which extended from Burgundy to Spain, the Netherlands and the entire Habsburgian estate. As he had an intense interest in the safe transmission of



Letter with an entry stamp of Bologna, and the cleaning stamp of Pontelaguscuro with the text "PONTALAGO^{co} / NETTA FUORI E DENTRO" (=Pontelago^{co} / cleaned outside and inside). The letter, sealed with black sealing wax, was opened by the sanitary authorities with preservation of the seal, disinfected, and sealed again with two seals of the sanitary institution. (Photo courtesy of Klaus F. Meyer.)

messages, he entrusted the von Taxis family of Bergamo, which already had made a name for itself in the Italian courier service, with the establishment of an imperial postal system, a task to which the family successfully devoted its great talent for organization.¹⁴ A few years later Maximilian's enterprise was mentioned in the Memmingen Chronicle of 1490:

In this year Maximilian I, the Roman King, decreed that post offices be established from Austria to the Netherlands, in France and on to Rome. Postal stations were designated five miles apart from each other all along the way, with one in Kempten, one in Bless (Plen, north of Memmingen), one at the bridge to Elchingen (Danube River downstream near Ulm), and so on, always five miles apart from each other. The first courier always had to wait for the other one, and as soon as the other one rode to him, he blew a small horn, which was heard by yet another courier, who lay in a hostel and who had to get up immediately. They had to ride one mile each hour, that is two hours, or they got a deduction from their pay, and they had to ride day and night. Thereby a letter often made it in five days from here to Rome.¹⁵

With the active participation of the whole family, a widely branched network of permanent postal routes emerged within a few decades and by the beginning of the sixteenth century letters passing along these routes could be transported within a firmly agreed period of time: from Brussels to Paris within 44 hours, to Lyon 4 days, to Granada 15 days, and to Toledo 12 days.

Being entrusted with the Imperial postal system was a profitable business for the von Taxis family and was the basis for the eventual wealth of the family, who also began to acquire titles of nobility. The establishment of permanent postal routes with more and more branches was slowed because of the continual wars, rapacious assaults, destruction of post offices or the essential stables. At one point, in 1556, the Brussels residence exchange was destroyed by fanatic Calvinists¹⁶ a situation which required repeated new investments. In the long run these investments were reasonable only insofar as a postal monopoly of a large area could be secured. For that reason the von Taxis struggled continuously through much of the eighteenth century to maintain their profitable monopoly of carrying the mail throughout as many parts of the empire as possible, sometimes against the efforts of regional sovereigns who wanted to establish their own state postal systems using private institutions such as the Metzgerpost or the Hinüber'schen Küchenpost.

With the surge of regional city-states, especially the political repercussions in the aftermath of the Thirty Years War, came additional threats to the monopoly. The considerable weakening of the emperor's authority subsequently was responsible for such blows as the Elector Friedrich Wilhelm of Brandenburg's refusal to reorganize the "ancient and well-ordered Imperial Postal System, which so far had been prevented from running properly by lengthy war mischiefs."¹⁷ This was the doing of Count Lamoral Claudius von Taxis. Not only did he establish (around 1660) his own state postal system, but he also induced neighboring states to do the same.

Also, the postal organization of Hannover, grown together from the dukedoms Calenberg, Wolfenbüttel and Celle-Lüneberg, hitherto had refused any activity of the Imperial Postal Organization on its territory. In 1678, these three dukes entrusted the energetic and gifted Francesco Capellini, better known under the name Stechinelli, with the organization of a state postal system in the three dukedoms. Before long this well-organized "welfische" state postal system, (which then and later, especially under the influence of the Royal Great Britannic Administration, refused any integration into the Imperial Empire Postal System) could establish itself in northwestern Germany by incorporation of already available structure.¹⁸

As competitive and disruptive as were both the state postal systems and the more locally oriented private butcher or kitchen posts for the von Taxis, the Imperial Empire still needed a postal system which could, with the utmost care, the best speed possible, and extreme conscientiousness, deliver letters and other mail. Free postage was provided for certain circles of the court, for the authorities, and the secrecy of the post. The care taken with handling letters, and the opening of packages only in the presence of officials with sworn allegiance to the Emperor, were natural duties of postal clerks. It was in accordance with the requirements of the time to regulate the procedures for certain situations with decrees to subordinate authorities, which includes the postal system; these regulations were particularly necessary in periods of plague or other emergency, as it had occurred previously, for example, in the decree of Hannover in 1680.¹⁹

This decree from October 26, 1680 is considered to be one of the first German official governmental decrees which deliberately regulated the fumigation procedure:

Edict of the Princely Government To the Postmaster of Hannover Concerning the Fumigation and, If Need Be, Burning of Letters and Packages Reaching the Post From Suspicious Areas: With the unfortunately increasing plague danger, greater and augmented care will be necessary: This is the order in the name and in the place of Reverendissimi Serenissimi, Our Most Gracious Prince and Highness. We remind you hereby strongly/ that you keep/ the Princely and other Free Letters and Packages coming from Upper Saxony and other infected or suspicious areas/ after having them fumigated together with other letters received at the same time/ and/ to make sure that they reach their destiny/ notify/ immediately His Highness Court-Law-Court-Assessor/ Breyer/ who has been entrusted with the supervision of the incoming and outgoing Princely and similar letters/ and then in the presence of him (who has to proceed to the end at the post office) with a certain pair of tongs and instruments/ which you order to make for that purpose/ open all of them/ again fumigate them well above a good flame of juniper berry or shrub/ and other hereto useful things in the open air/ next with the Princely Seal/ which shall be brought along each time/ and with the Post Seal/ [unread] (Breyer/ who will witness the opening/ shall be reminded to his oaths and duties/ We hereby will remind you too of your oaths and duties) close them again/ and thereupon dismiss him. Other letters and packages however, coming from those areas and addressed to this land, you must personally open/ with the above mentioned tongs and

instruments/ and after finishing fumigation [unread] close them again with the Post Seal/ and put them into a separate package/ and report/ to the other post offices and places/ where the mail is shipped to/ that they come from the above mentioned areas. You can indeed open and fumigate the other letters addressed to this town on your own; but you will offer in advance those people/ whom they are addressed to/ to be with you/ or to send one of theirs for that purpose. If there are, however, some letters among those coming from suspicious and infected areas/ which are entwined and secured with silk/ you have to immediately burn them unopened/ reporting, however/ where they actually come from/ and to whom they are addressed.

—Hannover, October 26, 1680

This Hannover edict was edited once more in 1738, with nearly identical wording, this time by the “Royal Great Britannic and Electoral Government of Hannover.” Meanwhile there had been a succession of other decrees, including the Prussian State, which had decided upon a new regulation of the whole postal organization. As early as 1712 it had appeared as “His Royal Majesty’s New Postal Order in Prussia including the revised regulation of March 19, 1710 and the new extra postal regulations,”²⁰ and in twelve chapters, with more than 100 paragraphs, dealt with everything deemed important to an orderly postal organization. In this context, Chapter 12 is of special interest in which detailed instructions for procedures in the case of epidemics is given to postal employees. Although it follows to some extent the Hannover edict, there are a number of remarkable innovations. In contrast, for example, it is specified in Chapter 12 that “all the paper which is used for correspondence be put first into plague vinegar or other strong vinegar, and only then write on it; furthermore, use only single-page letters of thin paper and where possible, do not use an envelope.” Such is to be used only after this pretreatment. Letters written prior to this treatment should “immediately on delivery be pulled through the vinegar once by the postmaster, fumigated with the fumigation powder, which the Collegium Sanitatis prescribes as follows:”

Rec. Nitri	1 bj
Sulphuris	1bβ
Bacc. lauri	
Herb. absinth.	
Millefol.	
Succini	aa 1 bβ
Misc. Fiat Pulv. Grossus	

Fumigation powder to be used by those post offices, which a postmaster or a postal employee has to pick up or prescribe in the closest pharmacy, and, when they have been dried again on a grid, or in winter time on the stove, sorted apart to clearly write on the letter itself the place from which it comes, in order to enable the recipient to also take his precautions when opening the letter.

Such letters with handwritten notes of places in different script and ink are available from Prussia and also from other German states, without being unequivocally classifiable as “disinfected” letters. In many cases all of the “places” have been added as declarations in border transit traffic or when changing to a new postal route. In this respect these handwritten notes of places are as yet ambiguous; the ambiguity needs clarification.

In the course of the eighteenth century, more and more importance was apportioned to the disinfection of letters by fumigation with herbs and, increasingly, with chemicals as well as by besprinkling with wine-vinegar. The number of treated documents increases with the beginning of the nineteenth century, not least as a consequence of the greatly increasing number of letters in the business correspondence of international trading houses. In this distinction trading with Southern Russia, the Orient and the East Balkan states is important—countries in which epidemics, mainly the plague, regularly afflicted the population. These areas were in sharp contrast—with regard to epidemics—to the Austrian-Hungarian territories, in which Austrian officials under the rule of Empress Marie-Theresia had begun to establish a sanitary administration since the middle of the eighteenth century. A physician, Dr. van Swieten, developed hygiene legislation which provided enforceable regulations sophisticated for the period.²¹ Such legislation had become necessary because of the permanent danger from the Ottoman Empire, with whom considerable trade was developing.

MOST ADVANCED HEALTH LEGISLATION IN EUROPE

In 1740, when Maria-Theresia took over the regency from her father, Emperor Karl VI, she also had to continue the task, which he had initiated, of establishing a smoothly functioning administration for all of the countries under her power, a sphere which extended far into the Balkan Peninsula. Moreover, Western Europe was increasing trading connections with the Oriental and Slavic regions, while still desiring to avoid epidemics. One of those fortuitous happenstances that change history was the way in which the Empress became aware of the capable Dutch physician Dr. van Swieten, student of Boerhave, who as a Catholic had little opportunity at the University

of Leiden. She gave him the title of her Physician-in-Ordinary to the Austrian Court. Within a few years he had been promoted to the influential position as *protomedicus* of Austria as well as many other offices. As a director of the medical system—functioning as a “minister of health”—he had to organize the Austrian medical system into the structures of Imperial administration. Van Swieten’s merit undoubtedly was his incorporation of scientific knowledge into the reorganization of medical education, the replacement of dull lectures with bedside instruction, and mainly the reorganization of the sanitary system, with its emphasis on keeping people in good health. With his achievement of the reorganization of the health system and the strict enforcement of hygiene legislation, he rates as the most important precursor of Johann Peter Franck’s concepts of “medical police.”

One of the measures destined to have the most far-reaching implications was the deliberate demarcation of the royal and imperial Austrian territories from the Oriental areas with their permanent epidemic potential. This demarcation developed in the form of a plague cordon along the border, a line which had been formed as a result of the military defeat of the Turks mostly by Prince Eugene, and which was confirmed by the Peace of Passarowitz in 1718.²² From the very beginning this military border was designed to be a



Letter from Prussia of 1831 with fumigation perforations and disinfection stamps “Desinficirt” and “Aussen gereinigt in Breslau.” (Photo courtesy of Klous F. Meyer.)

protective barrier against the introduction of plague, because as early as 1728 Emperor Karl VI had decreed in the royal edict of October, 22: "To arrange as soon as possible a permanent counteraction against the Turkish region and territories, because of a permanently threatening danger of infection from there, and to firmly keep doing this according to the present circumstances."²³

BASTION AGAINST THE PLAGUE

Eventually, a fortified border was extended about 1900 kilometers, stretching from Ragusa (what is today Dubrovnik) across the Balkan Peninsula as far as southern Poland. This [border] was designed along German lines, with a wall of palisades and watchtowers within respective sights. In order to expedite the exchange of goods, travellers and mail, "kontumaz" stations were established at heavily frequented crossings. These were large camps with washing and fumigation houses, lounges for the refugees, storage sheds for merchant wares, stables, maintenance shops with craftsmen and traders, houses for fumigators, servants, guard details, as well as officers who lived and worked at the stations. In many sites, a hospital was also constructed. The whole of commercial and tourist traffic was concentrated at these stations. They maintained the connection between Orient and Occident. At crossings of minor importance, "rastell" stations were set up with simplified equipment. These stations were effective only for sporadic, transit or local border traffic, and they could be closed at will, i.e., at any sign of plague.

Between the end of the eighteenth and well into the nineteenth century, the mail destined to pass from the commercially important centers of Odessa, Jassy, Constantinople, etc., to the trading companies in Western Europe, such as Paris, Zürich, Nuremberg, Vienna and Genoa,²⁴ had to pass through this "cordon sanitaire" and be subjected to fumigation. As was to be expected, most specific guidelines for the cleaning of letters were established, guidelines which already had been derived from a previous "new infections order" of Leopold I, from the year 1679. These guidelines read: "In regard to the cleaning of books/ papers/ letters and similar items, one should open them, take them out of the leather or the binding, leaf through them/ let them one day lie in the air/ then fumigate them over vapor of this or that vinegar/ over sulphuric vapor or any other kind of smoke/ or even hold them over freshly slaked lime and its vapors. . . ."²⁵

The intention of Emperor Karl VI, to establish such a "permanent plague cordon," could only be realized partially in the first decades after his declaration in 1728. The organizational skills of Empress Maria Theresia

(1740-1780) were required to achieve the intensive surveillance network developed through the use of the plague police. To be effective, this "permanent plague cordon" had to allow for surveillance of an enormous distance because, in contrast to the problems encountered in military surveillance, the "plague contagium" could be introduced by a single carrier, whether animal or man. For that reason the Viennese government astutely recognized that only a militarily organized peasantry, settled near the border, could muster up the will for total surveillance. This arrangement had become valuable in the ongoing border struggle with the Turks, which had been going on since the second half of the sixteenth century. Christian-Slavic farmers who had been cruelly suppressed by the Turks volunteered for this duty and settled near the border as free defense farmers on land offered them by the emperor. For the single soldier/farmer, however, this duty meant a considerable strain: 52 days a year he had to be on guard at the border, 49½ days he had "internal regimental service," and 48 days military exercises—the remaining seven months were spared for the "service with the plough." Any permanent arrangement of defense duty necessitated both military and civilian administrative cooperation: The general in command was at the same time the civilian governor of the region, and the company commander carried out the functions of a mayor.

There were three degrees of conscription for stand-by duty, dependent upon whether there was no known plague epidemic, or whether the plague had broken out in Constantinople, or whether cases of plague had been reported in areas near the border. The distribution of guards was so dense that "during daylight one guard could usually see the next one, and during the night successfully could call to him."²⁶ This concentrated surveillance of the long border was through partially trackless territory. This example demonstrates why the Theresian penal statute of August 25, 1766, was so severe, requiring the shooting of any animal roaming near the border and also any individual illegally trying to cross the border who did not halt when so commanded.²⁷

Such a functioning military and administrative organization could not be established hastily; this fact and particularly the training of mostly uneducated soldier/farmers, who in the end carried the main burden of border surveillance, lasted until about 1766. However, other regulations at the border were applicable at this time. Among these regulations was the "Contumaz and respective cleaning order," which had been issued on October 3, 1731:

Special persons are ordered for the cleaning of the letters/ because a mere cleaning of the outside by immersing them into vinegar is completely inexpedient/ for after having dried further/ the old miasma

CONTUMAZ,

Und respective

Reinigungs- Ordnung /

Wie solche /

Sowol mit denen Personen /

Als

In die Contumaz ankommenden
Waaren / wie auch Brieffschaften
gehalten werden solle ;

Und der Zeit

Auf denen diesseitig = Kaiserl. Gränzen
in Hungarn / Siebenbürgen / der Wallachen /
Servien / Slavonien / Croaten / und übrigen In. De.
Ländern / und Meer-Porten gegen das Türkische Ge-
biet / und Venetianische Dalmatien /
gehalten wird.



Title page of the "CONTUMAZ and respective cleaning decree" of 1738. (Photo courtesy of Klaus F. Meyer.)

still can remain inside/ the letters have to be opened and kept above well heated vinegar/ thereby they are cleaned by the vapor of vinegar (*volatolis acetoli*)/ and sealed again/ if however, articles of clothing or other materials are found inside the mail/ which cannot be cleaned effectively/ and which are not of that big importance for the general public/ then they shall not be allowed to pass.²⁸

This declaration shows that by this time there was a precise definition for the use of vinegar in the form of its hot vapor as a particularly active means of disinfection. That this practice was in use in the second half of the eighteenth century is evident from the report of a military surgeon of 1790, who commented on the use of “800 liters of vinegar for the army in Belgrade,” in the vicinity of which the main “kontumaz” station Semlin was located.

INSTITUTION FOR THE CLEANING OF LETTERS

Consequently, such was the situation relative to epidemics at the beginning of the nineteenth century: Austria had protected itself successfully against permanent threat of the plague and other epidemics from the Orient and southern Russia by establishing a sanitary cordon; France and Italy, as well as England, in a limited way—countries which carried on intensive trade across the Mediterranean Sea with the states of Asia Minor—protected themselves by establishing quarantine hospitals in large trading ports such as Marseille, Toulon, Livorno, Naples, and at the mouth of the Thames River, respectively. In this context the most important port was Malta, the centrally located island in the Mediterranean Sea. Its eminent role as a quarantine station for persons, goods and letters, was important to the people on this island who were employed to provide the numerous quarantine arrangements.²⁹ In contrast, countries which only had minimal direct Oriental trade and no immediate borders with states at risk for epidemics generally had not installed permanent quarantine facilities and disinfection measures at their borders. Only when the threat of epidemics was imminent and the risk of importing an epidemic through trade relations was high did these countries institute defense measures. A situation of this kind arose for the German states in 1804, when an epidemic of yellow fever broke out in Italian and Spanish ports. This epidemic, originating in Central America, had been brought by Napoleon's soldiers when they streamed back to Europe from the French Emperor's vain attempt to subjugate Mexico. Numerous authorities in Germany, in the Prussian, Saxon, Thurn and Taxisian, and especially the Bavarian territories, promptly responded to this threat of epidemic and issued directions of quarantine for travellers and goods as well as for the disinfection of letters and money. As one example, the instructions of the “Franconian District Order”

were cited in the territory where Nuremberg was located, a merchant city whose trading relations extended to important ports. For the first time, the extensive business correspondence of this town with Mediterranean port cities necessitated the establishment of a specially arranged institution for the cleaning of letters “at the bear entrenchment.”³⁰ This institution’s activity was regulated in detail. The instructions read:

Concerning arriving letters and packages from foreign countries,

- a) Closed letters, packages and printed public papers from Livorno, the whole of Tuscany and Spain must not be accepted anymore by the Empire Post Offices in the Franconian District, but rather,
- b) reports on those areas must be issued by the respective authorities to the German border post authorities, and that, in the future, letters coming from those areas are approved only when completely disinfected in vinegar, and either put into cross envelopes or left open;
- c) traders, however, and other people from Franconia corresponding to those areas, are ordered and requested, if they have to continue such a dangerous correspondence in another way, to reveal this decree to their friends.³¹

The establishment of this institution as an autonomous facility for cleaning letters was a new development in that it was working independently from postal authorities, a distinction rare for the time. Even the two men charged with disinfection were not paid by postal authorities, but rather from the coffers of the Franconian Sanitary Institution. The extent of their activity was considerable, as exemplified in the report of the Franconian “Sanitary Commission of the District” of April 30, 1805: “There is perhaps no week, in which less than 600 to 700 Italian and Spanish letters are cleaned; in the beginning this number went up to 1000.”

The enormous amount of work required for the fumigation procedure might well have been the reason for the compliance with the practice of cleaning letters with a stamp, which was procured in two versions. The texts of the two versions read: “Cleaned from inside and outside/ Nuremberg,” “Cleaned from outside/ Nuremberg.” Incidentally, this practice also represented the first use of a stamp on German soil.

Hence it seems that even at that time people were uncertain as to whether fumigation of letters merely from the outside sufficed, or whether there also

was a need for disinfection from inside—a distinction which touched the problem of the privacy of letters.

This rather extreme threat lasted only until the fall of 1805, when the Institution of Nuremberg discontinued its activity. During the next twenty-five years there was no global threat from an epidemic to the German states, although local epidemic foci, flaring up periodically, forced authorities to pay special attention, as indicated by isolated notes on the requirement of the fumigation of letters. With the widespread cholera epidemic of 1830-1832, the authorities once again increased their efforts to stifle the epidemic surging from the East through intensive fumigation of goods and letters. From that period there is an immense number of letters with fumigation marks and stamps; the disinfection of letters as a defense against the spread of epidemics finally had been generally accepted, and the procedure soon spread throughout Europe.

PROCEDURE FOR FUMIGATION OF LETTERS

At this point it is appropriate to terminate discussion of the chronological development and instead focus on the fumigation of letters common at that time.

The effort required for fumigation is illustrated by L. Dube's description³² of the procedure used in the Mecklenburg postal system. According to Dube, the postmaster carried the responsibility for protecting citizens by fumigating letters from distant regions. When an epidemic was encroaching, or when a large amount of mail was expected on a regular basis from infected areas, fumigation huts had to be established at the border crossings, and all mail suspected of having come from zones of epidemic disease had to be cleaned. The postilion, who had to deliver the mail from epidemic areas, made his approach known from far away by blowing the post horn, and he could approach the hut only when the area surrounding it was barricaded, and when he was separated from contact with other postal employees. He then entered the disinfection hut, in which the competent postmaster had provided all the essential things, such as the fumigation device, charcoal, vinegar, fumigation powder, etc. The postilion opened his letter bag in the disinfection hut, perforated the letters and small packages with a packing needle or a pin, immersed them into wine vinegar, and disinfected them with a fumigation powder of specified ingredients on a grid-iron above a charcoal fire. In Mecklenburg, for example, the fumigation powder consisted of equal parts of saltpeter, sulphur, laurels, herb of vermouth, yarrow and amber.

When the fumigation in the hut was finished, and when the letters were dry again, the postilion was required to record the place of origin of each letter in order that the addressee could recognize whether the letter came from a contaminated area. At the same time the “post-charte,” the list of the letters to be delivered by the postilion, had to be cleaned in the same way, and then together with the fumigated letters prepared for a postal clerk to take over. The postilion had to remove his letter bag and all other items (except the fumigated letters and the “post-charte”), and to withdraw to an appropriate distance. He first had to wait to see if he had received any personal mail. Only then could the replacement postilion enter the hut to fumigate his own letter bag and “post-charte.” At the same time, he had to disinfect the foreign letters himself and deposit them for the attendant postilion. This complicated and expensive procedure was supervised by armed soldiers, who had to see to orderly compliance with the law. No other individuals were allowed to have access to the hut, and the two postilions were forbidden to come into contact with each other. Incidentally, the postal employees who dealt with the fumigation also had to protect themselves from infection by taking “daily a good point of a knife full” of a powder, which consisted in equal parts of camphor electuary and garlic speedwell electuary.

FUMIGATION AND PROTECTION REMEDIES FROM PHARMACIES

Probably all fumigation procedures, at least the way they were commonly practiced at the borders of the German states in the eighteenth and at the beginning of the nineteenth centuries were similar to this example. The strict requirements in handling problems associated with epidemics probably were dependent upon the severity of the threat. Consequently, from the point of view of affected officials, the risk associated with disinfecting mail was most pronounced when the plague or another epidemic disease flared up in the surrounding states. The respective postal instructions were renewed and updated repeatedly with contemporary findings. In Bavaria alone these changes were recorded four times during the eighteenth century: 1720, 1738, 1770 and 1790, when the plague surfaced repeatedly in Marseille, Hungary, Bohemia and other areas. In this context, yellow fever is especially important in that it was a new epidemic which appeared for the first time in Europe in 1804, and the defense measures taken included some new details:

1. Letters and papers are not to be held with bare hands, but with a small pair of tongs. . . .

5. Following immersion (in wine-vinegar), they immediately have to be dried with the greatest possible care over a coal fire or on

warmed copper plates, so as to prevent them from losing their shape and sticking together, which would destroy the correspondence.

6. Now the nitric acid vapors can pass through the letters for six minutes by holding them directly over the fumigation vessel.

7. Letters must not be packed again, before they are dried completely.

8. Remember that letters and papers which arrive from really infected places have to be cleaned not only from outside, but also from inside, and for that reason they have to be opened. . . .³³

It is apparent from this quotation that chemicals had begun to be used in the fumigation procedures. A particularly effective procedure is described in the "Electorate Palatinate Bavarian Paper" of December 1, 1804, which includes an antidote to prevent a byproduct of the chemical process—the fading of the writing.

For the fumigation of letters, you pour 1 Loth vitriolic oil into an earthen or glass pot with 1 Loth of fine pulverized common salt, mix it well, and put the pot into a wooden box, which is big enough to hold a white and completely dry loosely woven osier basket hanging 6 inches above the bottom of the box. The basket shall have four corners and fill the upper part of the box. For 1 Loth common salt and 1 Loth vitriolic oil, the box may be 4 feet high and 2 feet wide and deep, and closed by a bolt; its slits are patched up with paper strips. The pot containing the mixture is put onto a heated stone. Then you get letters which have become nearly unreadable by the fumigation with acids; you can reproduce the ink with the following remedy: Pound one medium size gall-nut fairly fine and pour 3 tablespoons of boiling water over it. When the water has stained brown, spread it onto the writing with a sponge or piece of linen cloth soaked with it.³⁴

It would be superfluous to examine all the instructions individually for variations. What is important to remember is that the application of chemicals had been introduced increasingly into the fumigation mixtures by this time, and that finally these chemicals alone served as fumigation remedies; the chemicals themselves had to be procured almost exclusively from pharmacies, as is apparent from many notes in the instructions.

STAMPS FOR RECOGNIZABILITY

The increase in fumigation measures for correspondence may well have been the reason for the more frequent use of a stamp to indicate the fumigation. In all probability such stamps had been in use for several decades in the general postal service, but only in the beginning of the nineteenth century did it become general practice to use them for postal purposes as well as verification of the fumigation procedure. Hence, "sanitary stamps" are not postal stamps, but rather additional entries with no connection to tax or location stamps of import to postal authorities, although postal employees mostly also did the job of fumigating letters. The origin of the stamps may very well be the sanitary seal—that is, the seal of the "Kontumazanstalt" (Kontumaz Institution), which always stamped its seal on processed goods. In 1762 Venice first had stamped such a seal showing the Markus Lion and the abbreviation "PMF" (for *profumata*)³⁵ onto fumigated letters, and from that time on this simplification rapidly found acceptance in the Austrian administration.

The design of the stamps was relative to the peculiarities of that time and the often autonomous status of many towns with diverse interests. There are all sorts of examples: simple unframed stamps, round or angular framed stamps with the text "Netto di fuori" (clean from outside) or "Netto di fuori et sporco di dentro" (clean from outside and unclean from inside), the round stamp with the Austrian double eagle, in use for a long time, and also very ornamented forms. In spite of the stamps, fumigation also was indicated by handwriting, with preprinted tickets, or just by changing the stamp color of normal postal stamps. Letters without any verifying notation are common; these can be recognized by their more or less typical perforations or slittings, which allowed the smoke to reach the interior, by discolorations by smoke of chemicals or by splashes of wine-vinegar; typical signs which allow the historian to determine the locale of the disinfection procedure with certainty.

GREAT CHOLERA EPIDEMIC IN THE NINETEENTH CENTURY

The great cholera epidemic from 1830 to 1832 was of special importance in the development of the fumigation process. This epidemic, endemic to India for centuries, had begun to spread all over the world at the beginning of the nineteenth century for reasons not previously understood.³⁶ Slowly but steadily the disease spread along the ancient caravan routes through Russia and the Near East, and approached Europe. The terror of its destruction rapidly spread over the European continent and caused the authorities to study its mechanism of spreading from the early stages. Numerous groups of



Interior of the Austrian Kontumaz Institution, 1831. Letters and food are handed over to the inmates with long poles. (Photo courtesy of Klaus F. Meyer.)

physicians intent on learning about the disease travelled to India, Russia and Galicia to study the results of previously unheard of therapies and the efficacy of isolation measures. On the basis of their recommendations, Prussian authorities decided early on to make preparations for the establishment of a separation line along the easterly border, and to determine prototypical procedures for the traffic of persons, goods and letters. In doing so, these authorities basically referred to the experiences of the Austrian sanitary administration, which had decades of experience with the “cordon sanitaire” at its southeastern border. Semlin, near Belgrade, was considered an excellent example for the establishment of “kontumaz” stations, and was recommended as a model. The directions were worked out with great care according to the information available at the time, and precise instructions for the handling of any goods and letters at the borders were listed. Here is an example of one from the Prussian Ministry of the Interior:

III. Procedures According to Letters

25

All letters and papers which are not proven to come from an area completely free of Cholera, but instead from a suspicious or admittedly infected area, must be cleansed by fumigation.

26

For that purpose, one uses a wooden box which is divided into three parts from bottom to top. In the uppermost part there is a grid of iron wire, which the letters are put onto with a pair of forceps like letter sheet tongs. Having closed the upper compartment of the box with a tightfitting lid, the fumigator puts a pan with vinegar in the middle compartment, and a coal pan with glowing coals and fumigation powder strewn onto it (consisting of 1 part sulphur, 1 part saltpeter, and 2 parts bran) into the bottom, and thereupon the box is closed except for a small opening for ventilation. Thus, the letters to be fumigated remain exposed to the disinfection smoke for five minutes' duration for their external cleansing, after which they are removed, widely perforated with an awl, and, if in exceptionally suspicious condition, probably also cut open at the side, and then put back again into the fumigation pan for another five minutes, and exposed to the heat, the vinegar vapors, and to the smoke from the fumigation powder.

27

When the letters have been removed for the second time, they are marked with the sanitary stamp, and carried on by couriers from the area on this side [of the sanitary cordon.] The couriers who brought these letters are allowed to travel on only after completion of the "Kontumaz" time, subject to a possibly allowed preferential treatment. . . .

Berlin, June 1, 1831

Ministry of the Interior and the Police.

Freiherr of Brenn³⁷

This direction was considered exemplary, and served as a model for most of the German administrations to issue their quarantine orders. When cholera approached their respective borders, these prepared measures were enacted; where these measures were already in practice, any lax handling of mail disinfection was reprimanded,³⁸ and careful compliance was requested by the higher postal authorities.

However, all quarantine and disinfection measures proved to be insufficient; cholera spread across the cordon line over all of Prussia and later over all of western Europe, too. This catastrophe caused authorities to order not only the disinfection of letters arriving from the East, but also the outgoing mail from Prussia. This measure was ordered by the chief of the "Immediate Commission for the Defense Against Cholera," von Thile, on September 2, 1831:

The cleansing of outgoing mail from an infected place is performed before dispatch in a separate area of the post office. Each postal institution in an infected locale is supplied with the sanitary stamp and after cleaning, stamps [the seal] on each outgoing letter. The exterior cleansing which is done on the separation line, is indicated on the letter packages, the charts, and freight tickets by the sanitary stamp of the "Kontumaz" institution."³⁹

Consequently, for the first time the disinfection of letters and other postal material was regulated in detail and a sanitary stamp ordered to be used in all post offices. The abovementioned date was also during the period in which cholera had reached Berlin. Prior to this time there had been only isolated letters from German towns like Danzig or Königsberg to be fumigated, but from this point on the fumigation procedure was carried out in all German states. In addition, Hannover,⁴⁰ Saxonia, Mecklenburg, Bavaria and certain Thurn and Taxis districts enacted procedures for fumigation as soon as cholera approached the borders.

Yet the prescribed procedure led to some unease among authorities because the perforation or even cutting open of letters could be the source for secret information leaking to the public. For that reason it was ordered in another notification of September 17, 1831, that certain royal authorities could disinfect the documents, letters, charts and the like, which they had to mail, prior to closing and packing them, on their own. Hence the perforation was unnecessary. An additional disinfection of this mail by the post offices was superfluous. Thus, each official who had the right to disinfect on his own had to indicate this operation by a respective stamp. This fact explains the diversity of German sanitary stamps, because many officials took the responsibility for cleansing in their own hands, although the period of time in which letters were subjected to the fumigation procedure was very short. Indeed, fumigation of letters was practiced only between the beginning of September and the end of December, 1831. Although it was a directive that letters only had to be disinfected once (official correspondence by the authorities themselves and regular mail by postal employees), official

documents often carried a verifying stamp of authorities as well as one from the postal system, a fact which suggested that they were disinfected twice.

In some cases it seems probable that border "kontumaz" institutions directly subordinated to a ministry could disinfect their letters by themselves, as was the case in Swinemünde, Nimmersatt, and Königsberg. However, because of the few known documents to have been done this way and the difficulty in ascertaining verification, this peculiarity hitherto has been little investigated.

With the waning of the cholera epidemic during the year of 1832, quarantine institutions were gradually closed; the disinfection of letters had been discontinued in the beginning of this year throughout most of Germany. Only Hamburg retained disinfection procedures well into the 1840s.⁴¹ In other countries, however, such as Austria, France or the Italian states, the fumigation of letters was continued for decades. The opinion that letters could not be the carrier of the cholera germ or the plague *bacillus* gradually began to be accepted. These opinions ran parallel with the increasing scientific investigation of the epidemics and their dissemination.

DISINFECTION OF LETTERS RESTRAINS THE RAPID TRANSPORTATION OF MAIL

Around 1860/70 the number of letters which were disinfected clearly decreased throughout Europe. This development was in large part due to the evolution of transportation technology in Europe, in full swing at that time. As transportation of mail by rail became faster and more sophisticated and with the increasing volume of mail, fumigation of letters involved not only high cost but also significantly delayed transportation of mail.

These complications are well illustrated by an incident reported in 1883,⁴² when an outbreak of cholera in Egypt and other countries in Asia Minor forced a modification of postal routes relative to mail sent from these countries to Europe. Until this time letters were sent by boat as far as Brindisi and then were forwarded by rail; fumigation of letters, however, was impossible at Brindisi because there was no real equipment and only limited personnel. For that reason, it was decided that instead of directing mail suspected of infection by rail through Italy as had been done in the past, it would be better to send it first by steamer to the island of Poveglia near Venice, where better personnel and technical equipment were available in the quarantine hospital. The decision to use ship's passage involved considerably more time still, and led to complaints of impeding regular commercial traffic. As soon as the acute risk of

cholera was over, the Italian postal administration allowed transit mail to Austria and Germany to be transported on land by rail again, but only within tarred postal sacks. With these latest decisions, fumigation of mail entering Europe was discontinued. Thus, fumigation procedures would have been possible nowhere else but at the Austrian or German border. Subsequently, mail officials wondered whether disinfection under such strictures was still warranted.

PETTENKOFER PROVES USELESSNESS OF FUMIGATING LETTERS

At the request of the Empire Post Office, the Royal Bavarian Postal Administration entrusted hygiene expert Max von Pettenkofer with determining the efficacy of fumigating mail. In a detailed opinion issued on February 5, 1884, he unequivocally refuted the basic idea of fumigating mail, concluding with the following:

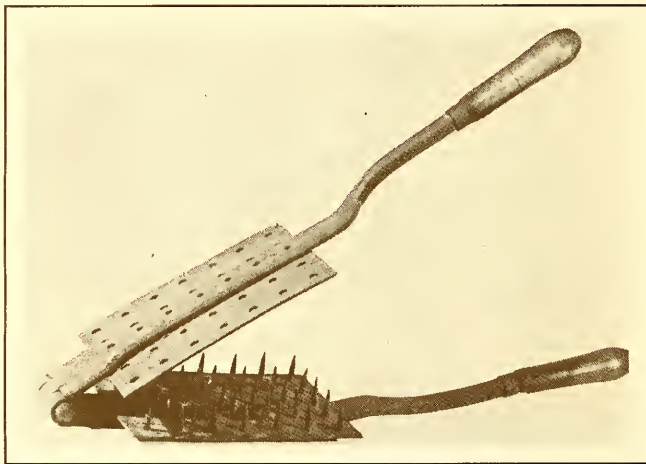
Finally, it shall be emphasized, that, even if it were conceivable for a letter to contain viable cholera germs, although nothing of that became evident until now, the effect of its disinfection would be completely illusory, for the facts show very conclusively that during its dissemination cholera almost always is spread in ways separate from the mail. Even if it were possible to completely prevent the transmission of disease through mail by the most precise disinfection procedures, all the other ways which cholera usually disseminates would remain viable. If you don't want to interrupt all other traffic, cholera would still be among us as before, when local and temporal conditions are present. With these facts, the Royal Superior Board of Health cannot recommend continuation of the costly and ineffective procedure.

[Signed] Dr. von Pettenkofer⁴²

The importance of disinfecting letters gradually had decreased in Europe because of Pettenkofer's opinion and Robert Koch's and Louis Pasteur's scientific findings. Since that time, though, measures for the decontamination of letters appear here and there, such as in 1887 in Valparaiso, (Chile), in 1916/17 during World War I in Austrian field hospitals set up to contain and treat victims of epidemics, in 1952/53 in Vienna and Klagenfurt, with the use of formalin gasification, and as late as 1967 and 1972 in the area of Hannover during two smallpox quarantines, when letters and money were "ironed germ-free," as it reads on the attached confirmatory stamps.⁴³ As anachronistic as this last procedure may seem now, it still makes the most sense of all the earlier procedures to treat mail with heat before they leave the

quarantined area, because the smallpox virus *Variola* is killed at a temperature of 55 degrees Celsius, which can be easily reached by a flat-iron.

As this last example clearly shows, the disinfection of mail as a way to contain disease in the centuries-long struggle against epidemics was ineffective. Viewed in perspective, however, these measures actually do have their place in the whole development of the hygienic system. The confrontation of man with his threatened surroundings lasted for centuries and has lead us to an exceptional level of public health in the fight against epidemics.



Pair of tongs for the perforation of letters. (Photo courtesy of Klaus F. Meyer.)



Measures of precaution against the intrusion of cholera patients were also taken in the ports. They were quite old fashioned and none too efficient, as exemplified by this picture of a naval officer, isolated in Marseille because of the epidemic of 1893, who is visited by his family. (Photo courtesy of Klaus F. Meyer.)



1. E. H. Ackerknecht, *Geschichte und Geographie der wichtigsten Krankheiten* (Stuttgart, 1953).
2. W. H. McNeill, *Seuchen machen Geschichte* (München, 1978).
3. R. Benecke, *Die Pest* (Hamburg, 1900).
4. G. Sticker, "Seuchengeschichte und Seuchenlehre." Bd. 1, *Die Pest* (Gießen, 1908).
5. H. Kurten, "Die Wanderungen der Pest in der Kulturgeschichte," *Universitas* 6(1951):173-182.
6. J. F. C. Hecker, *Die großen Volkskrankheiten des Mittelalters* (Hildesheim, 1964/reprint des Originals von 1865, Berlin).
7. J. Nohl, *Der Schwarze Tod* (Potsdam, 1924).
8. J. Lentner, "Das Brieffräuchern in Bayern bei Seuchengafahr," *Archiv für Postgeschichte in Bayern* I(1963): 269.
9. K. F. Meyer, *Disinfected Mail* (Holton/Kansas: 1962), 153.
10. Lentner, "Das Brieffräuchern," 269.
11. *Ibid.*, 268.
12. H. Schmidt, *Deutsche Zeitung für Briefmarkenkunde*, I(1968): 106.
13. A. Wyss, "Die schweizer: Post von ihren Anfängen bis zur Gegenwart," *Archiv für deutsche Postgeschichte* 2 (1978): 102-137.
14. M. Piendl, "Thurn und Taxis, 1517-1867," *Archiv für deutsche Postgeschichte, Sonderheft* I(1967).
15. *Ibid.*, 6.
16. *Ibid.*, 14.
17. *Ibid.*, 22.
18. A. von Lenthe, *Hannover, Postanstalten und Postempel* (Horne/Kehdingen: 1957), 14-17.
19. A. Heinsen, "Die Brief-Desinfektion der Königl. Großbritt und Churfürstl. Hannoverschen Post," *Der Deutsche Philatelist* 4(1933): 23-26.
20. "Sr. Königl. Najestat in Preußen Neue Post-Ordnung nebst dem revidirten Reglement vom 19. Martii, 1710 und dem Neuen Extra-Posten-Reglement." (U. Liebert, Königl. Preuß. Colln a.d. Spree: Hoff Buchdrucker, 1712).

21. L. Breitenecker, "Von der Staatsarzneykunde zur 'Rechtsmedizin'," *Österr. Apotheker Ztg.* 25(1972): 453-455.
22. H. Schmölzer, *Die Pest in Wien* (Wien, 1985), 148ff.
23. E. Lesky, "Die Österreichische Pestfront an der k.k. Militargrenze," *Soeculum VIII, Heft 1* (1957):84.
24. "Die Postverbung zwischen Vien und Konstantinopel: Blätter für Altbriefsammler und Postgeschichte," *Sammlerdienst Coburg 24* (1979), 1859.
25. Meyer, *Disinfected Mail*, 26.
26. Lesky, "Die Österreichische Pestfront," 89; und E. Lesky, *Philatelistische Forschungsblätter (Graz)* 7(1971):26.
27. *Ibid.*
28. Meyer, *Disinfected Mail*, 28.
29. J. Gelea, *The Quarantine Service and the Lazaretto of Malta* (Valetta, 1967).
30. Lentner, "Das Briefräuchern," 295.
31. *Ibid.*, 296.
32. L. Dube, Die Mecklenburgischen Landesposten bei Seuchengefahr," *Archiv für Deutsche Postgeschichte* 1(1979): 135-140.
33. Lentner, "Das Briefräuchern," 294.
34. *Churpfalzboyerische Mühener Ztg*, Nr. 285, zit nach J. Lentner, 295.
35. "Bolli e documenti di sanita," *Italphil S.R.L.* (1980): 66.
36. St. Winkle, "Die Cholera mit ihren vielfältigen kulturhistorischen Wechselbeziehungen," *Die Gelben Hefte* 16 (1969):777-788; und 17 (1969):868-880.
37. *Sammlung der..Verordnungen und Instruktionen weger Verhütung und Behandlung der Asiatischen Brechruhr (Cholera morbus)*, Frankfurt/M., Heft 1(1831):88.
38. Lentner, "Das Briefräuchern," 2 (1964): 72.
39. J. Büttner, "Die Berliner Cholera-Epidemie von 1831," *Sammlerdienst, Coburg* 9 (1977):590-591.
40. K. Meyer "Die Desinfektion von Postsachen während der Choleraepidemie 1831 im Königreich Hannover," *Postgeschichte und Altbriefkunde* 60 (1980): 1-22.
41. Meyer, *Disinfected Mail*, 161.
42. "Die Desinfektion der Postsendungen als Schutzmaßregel gegen die einschleppung der Cholera," *L'Union Postale* 6(1884), zit nach *Pratique* (1978):91-105.
43. K. Meyer, "'Keimfrei gebügelte' Briefe von 1972," *Philatelie und Postgeschichte* 95 (1987): 1-5.



Different sanitary and disinfection stamps from several countries. (Photo courtesy of Klaus F. Meyer.)

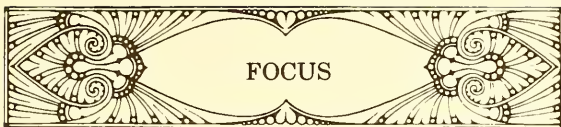


Klaus Meyer has been collecting letters of disinfected mail for nearly twenty years and believes that he is the only German conducting this research. Given the fact that for the past forty years Germany has been a divided country, Dr. Meyer's research has been all the more formidable. Documents of the Prussian ministries are housed permanently in the State Archives of the German Democratic Republic (DDR) in Merseberg and it is very seldom that anyone from the Federal Republic of Germany is allowed access to these documents. In 1985 Dr. Meyer finally received permission to visit the DDR State Archives and in particular obtained copies from 1831 Prussian ministries' correspondence dealing with quarantines, sanitary cordons and "kontumaz" stations. In addition, he has received information regarding previously undiscovered cachets from Bavaria, Prussia and Cuxhaven.

Credit for bringing Dr. Meyer's extensive work with disinfected mail to the attention of English-speaking readers is owed to Emmet F. Pearson, M.D., who arranged for the translation by Reinhard Kappe, M.D., a German national and Fellow in Southern Illinois University School of Medicine's Department of Medical Microbiology and Immunology. Dr. Kappe is an assistant professor at the Hygiene Institute, University of Heidelberg.



Exterior of Old Pathology Building, which houses the Indiana Medical History Museum. (Photo courtesy of Indiana Medical History Museum.)



The Indiana Medical History Museum: Historic Site and Museum of Medical History

by Katherine Mandusic McDonell

Prior to 1880 the United States had only a handful of medical research laboratories. As the century drew to a close, however, Americans became more interested in research and laboratories became more common.¹ This enthusiasm for research even spread to the mental hospital, which for decades had shunned scientific methods and techniques.

The change of attitude toward research on the part of hospital staff can be explained partially by mounting criticism from both the lay and the medical communities. By the 1870s mental hospitals had become custodial, rather than curative, institutions. Neurologists blamed institutional psychiatrists (hospital superintendents) for the hospital's plight. According to neurologists, psychiatrists not only had inadequate training in neurology and psychiatry but also lacked a "spirit of scientific inquiry."²

In response to this criticism, a number of mental hospital superintendents hired pathologists on their staffs and provided facilities for autopsies and rudimentary laboratory work. Still, these early laboratories were far from research centers envisioned by neurologists. Moreover, few hospitals made any effort to pass new findings on to hospital psychiatrists. Thus, research at mental hospitals rarely translated into improved patient care.³

During the 1890s several neurologists and psychiatrists proposed that mental hospitals be reorganized to provide training in the examination and diagnosis of mental illness and facilities for scientific investigation. Noted

neurologist Adolf Meyer even went so far as to say that these institutions should have a university connection to “break the isolation of mental hospitals.”⁴ In 1896 Meyer reorganized Worcester State Hospital with an emphasis on research and teaching. He also opened a five-room pathology department in the administrative building of that institution.⁵

In the same year that Meyer dedicated Worcester’s laboratory, the Central Indiana Hospital for the Insane (now Central State Hospital) opened an even more elaborate teaching and research facility. Had the original intentions of its founders been fulfilled, work at this nineteen-room pathology laboratory would have far exceeded the research efforts of the leading mental hospitals. Unfortunately, except for its teaching functions, many of the original plans for the building remained unfulfilled until the twentieth century. The building continued in use as a state facility until the late 1960s, when the Indiana Medical History Museum, a private, nonprofit organization, assumed control of the “Old Pathology Building.” The museum operates the facility as a historic site and interprets the building as a turn-of-the-century research facility.

Plans for a scientific department at Central State Hospital had begun in 1890. Hospital superintendent Charles E. Wright hired a pathologist, but a research department never materialized. In fact, the pathologist remained at the hospital for only a few years.⁶ Dr. George F. Edenharter succeeded Wright as superintendent and on October 31, 1894, he revealed his plans for “a medical center” on the hospital grounds. This structure was designed “for the use of physicians and medical students of the State, wherein the diseases of the mind and nervous system could be clinically studied and, if possible determine their cause and formulate methods for their prevention and cure.”⁷ Two years later on December 18, 1896, Edenharter realized his dream with the formal dedication of the Pathological Department of the Central Indiana Hospital for the Insane.⁸

Although the original plans for the Pathological Department consisted of a one-story, four-room structure, the final product was a two-story, brick building with 4,000 square feet and nineteen “working rooms,” including a lecture hall (or amphitheater), museum, dissection and autopsy rooms, library, photography room, three laboratories, supply rooms, records room and office space.⁹ The interior of the building combined beauty with utility and efficiency. The cabinets, woodwork and laboratory tables were all white oak, an inexpensive, widely available building material. Brass fixtures and copper and tile trim adorned the laboratory tables. Since much of the work in the building centered around use of the microscope, the architect included skylights in the building to enhance the artificial light.



The library, located on the second floor of the Old Pathology Building, originally contained 500 medical volumes for use by staff physicians and medical students. (Photo courtesy of Indiana Medical History Museum.)

The building contained state-of-the-art research facilities and laboratory equipment to study mental illness scientifically. The editor of the Indianapolis *Sentinel* noted: "Physicians who have studied in the pathological laboratories of the old world say they have seen nothing to surpass it."¹⁰ Yet, despite the facility's promising potential, original research was not undertaken for almost three decades. Perhaps because of internal strife and low pay, the hospital had a rapid succession of pathologists. Also, unlike the leading psychiatric research laboratories of the period, the Pathological Department at Central State did not incorporate experimental physiology or experimental psychology into its daily laboratory routine.¹¹ Despite the problems besetting the department, the work in the building satisfied a very real need at the hospital. More precisely, it greatly improved the ability of the staff doctors to diagnose and treat their cases on the wards. Moreover, it provided the local medical schools with a teaching hospital for neurology and psychiatry.¹²

Because of the importance of the building's teaching function, tours of the Indiana Medical History Museum's Old Pathology Building begin in the amphitheater. This acoustically-perfect room consists of eight semi-circular wooden tiers rising at one-and-one-half foot intervals from a teaching pit below. The architect designed the amphitheater to accommodate 150 straight-backed, cane-bottomed chairs. All but a few of the amphitheater's original chairs have survived to the present.

The hospital's first pathologist, Dr. Robert Hessler, frequently conducted classes for the medical staff in histology, clinical chemistry, bacteriology and pathology in this room.¹³ Many of the hospital physicians had little or no training in these disciplines. The hospital also invited local physicians and medical students to special clinics in the building. In 1900 two private, or proprietary, medical schools, the Medical College of Indiana (affiliated with Purdue University) and the Central College of Physicians and Surgeons, held formal classes in neurology, psychiatry and brain pathology in the building's amphitheater.¹⁴ In 1908 the faculties of the proprietary medical schools merged to form Indiana University School of Medicine. Psychiatry and neurology classes from the school continued meeting in the building until 1956.

Autopsies were an integral part of the work conducted in the building. The morgue has changed little from the turn of the century. While the hospital pathologist performed the autopsy, one of Central State's physicians assisted him and another recorded the details of the postmortem. The hospital physician who served as clerk worked in a room immediately above the morgue. (This room also is open to visitors.) The physician performing the

autopsy talked through a speaking tube running from the first-floor mortuary to the second-floor records room. Bodies for use in the mortuary were stored in a small ice house (known as the “dead house”) next to the pathology building. Because there was a lack of cadavers for use in the medical schools at this time, grave-robbing (especially from state mental hospitals) was prevalent. The administration took special measures to insure that bodies would not be stolen from the hospital. Special cages, or “wire corpse protectors,” locked over bodies stored in both the mortuary and dead house to prevent their removal.¹⁵

A small funeral parlor adjoined the morgue on the first floor. Most of the patients admitted to the hospital were poor, and their families could not afford to pay for burial expenses. Thus, the state provided the patient’s family with a free funeral. The inclusion of a funeral parlor in a pathology building was not unique to Central State, nor was it purely an act of generosity on the part of the state. Since the research at this time depended upon the regular performance of postmortems and, given the popular prejudice against autopsies, a free funeral gave added incentive to the patient’s family to agree to this procedure.¹⁶ The area once occupied by the funeral parlor is now used for museum office space. When a separate exhibits hall eventually is constructed, this area will be restored to its original condition.

From the morgue one moves to the anatomical museum. Here representative or unusual specimens of brains are preserved in jars containing formalin. Using the pathological specimens in the museum, along with tissue sections which had been prepared in the building’s histology laboratory, the hospital pathologist worked with three medical staff members for two hours each day studying the physiological manifestations of various mental and nervous disorders.¹⁷

A tour also includes the building’s histology, clinical chemistry, and bacteriology laboratories, library, and photography room. Much of the original laboratory and photographic equipment are still in the building. The original library collection also has survived intact. After 1901 the bacteriology laboratory, as well as the clinical chemistry laboratory, served primarily as diagnostic facilities for the new 100-bed “Hospital for the Sick Insane.” Thus, the pathologist’s attention focused on acute diseases of patients admitted to the hospital. Furthermore, the bacteriology laboratory was used to test food products for the institution.¹⁸

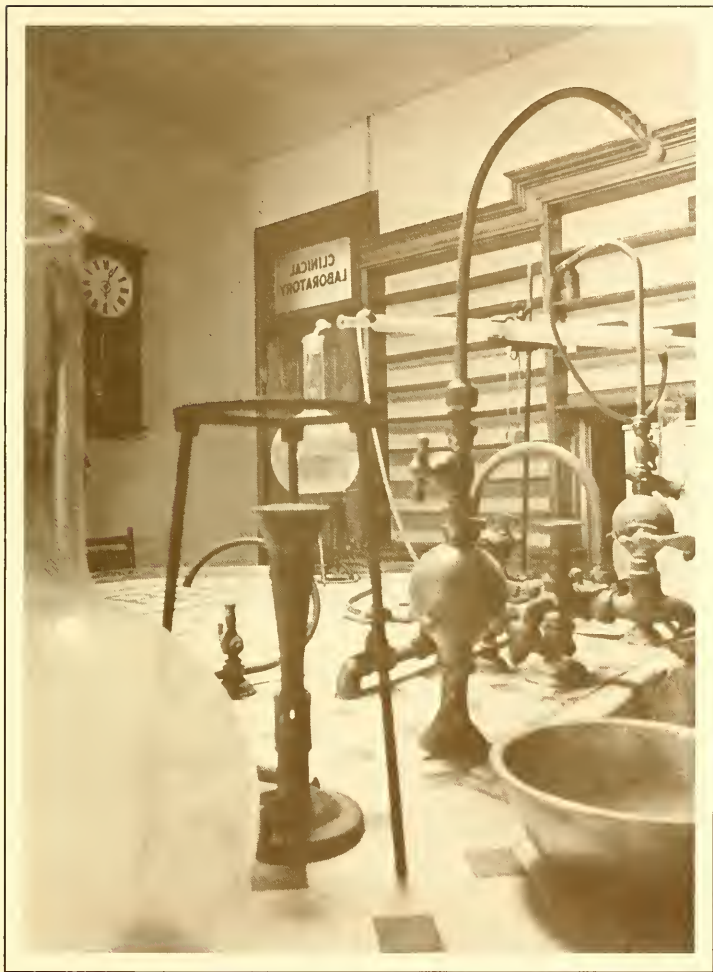
In the 1920s and 1930s, laboratory work at the Pathological Department of Central State focused on the study of neurosyphilis. Central nervous system syphilis was one of the major causes of institutionalization in the late

nineteenth to early twentieth centuries. At that time, no reliable cure existed for the disease. In the 1920s, Austrian physician Julius Wagner-Jauregg noted that when a high fever was induced in patients suffering from central nervous system syphilis, a marked improvement could be observed. The fever was produced by injecting live malarial virus into the syphilitic patient. Until the introduction of penicillin in the 1940s, the malaria or “fever” treatment of syphilis and arsphenamine were the only treatments which had any effect in stopping the disease’s degenerative progress.¹⁹ In 1925 a pathologist named Walter Bruetsch (1896-1977) joined the staff of the hospital. Bruetsch was born in Germany and had studied medicine in Heidelberg and Freiburg. Bruetsch introduced von Jauregg’s treatment to hospital staff and continued research on syphilis and its effect on the nervous system.²⁰

Until the 1930s, research centers like Central State Hospital’s Pathological Department remained an important part of medical education in neurology and psychiatry. By the 1940s, however, the educational importance of these centers diminished. Medical schools were urged to upgrade the teaching of neurology and psychiatry by hiring full-time professors and establishing psychiatric research centers on medical school campuses.²¹ Thus, by the 1940s few relics remained of this era of scientific psychiatry. These laboratories were either torn down, remodeled for other uses, or modernized.

Central State Hospital did not close its laboratory in the 1940s. In fact, the laboratories and classroom continued operative until the mid-1960s. During the 1930s, there were some minor alterations in the building (i.e., the lighting devices and floor covering were changed). Yet, the hospital never modernized the laboratories. The white oak woodwork, laboratory tables, and cabinets have remained as they were at the turn of the century. The solid oak amphitheater, too, has survived unchanged. Furniture and laboratory equipment likewise remained in the building. Even more remarkable, all the postmortem records (including autopsy records, tissue slides, lantern slides, and pathological specimens), as well as Walter Bruetsch’s research notes and studies on syphilis, have survived to the present. The Old Pathology Building which once symbolized Indiana’s entrance into the age of modern medicine and psychiatry, is now a registered national landmark and is one of the oldest surviving pathology laboratories in the United States.

The Indiana Medical History Museum maintains the Old Pathology Building. Through special legislation passed in 1986, the State of Indiana granted the museum a 99-year lease (for one dollar per year) to the building and the surrounding land. This lease arrangement allows the organization to open an entrance to the museum, separate from the hospital’s, and to



The clinical chemistry laboratory was used for testing. (Photo courtesy of Indiana Medical History Museum.)

construct an exhibit hall adjacent to the Old Pathology Building. By the end of 1989, museum staff will begin the first phase of this long-range plan by creating a new entrance to the museum and expanding its open hours to the public.

While staff view the Old Pathology Building as the museum's most priceless artifact, the care and interpretation of that building represent only part of overall operations. The museum also maintains over ten thousand artifacts pertaining to the history of nineteenth- and twentieth-century health care. This collection contains items related to general medicine and surgery, military medicine, health fraud, pharmacy, nursing and dentistry. It also has large numbers of artifacts from Indiana-based firms such as Eli Lilly and Company, Miles Laboratories (the manufacturer of Alka Seltzer), the W. D. Allison Company (a leading manufacturer of physician's furniture in the late nineteenth and early twentieth centuries), William Armstrong Company (a distributor and manufacturer of surgical equipment), and Zimmer Manufacturing Company (a manufacturer of fracture equipment). The museum likewise maintains a growing collection of portraiture and medical artwork. Its library has over 3,000 medical volumes from the late nineteenth and early twentieth centuries, as well as all the research records of the various Central State hospital pathologists. Museum staff use these artifacts and collections for research and in traveling exhibits throughout the state. By the autumn of 1989, the museum will have instituted a program of changing exhibits by converting a modern laboratory (which occupied one portion of the historic Old Pathology Building) into an exhibit gallery. The museum is also in the process of preparing kits for schools.

The Indiana Medical History Museum is currently open on Wednesday afternoon from 1 p.m. to 4 p.m. and by appointment. The museum's Old Pathology Building provides the public with a unique opportunity to "experience" the beginnings of modern, scientific medicine. Moreover, through its rapidly growing collection of medical artifacts and expansion of outreach programs, museum staff hope to introduce the public to medicine's fascinating history and facilitate public understanding of the relationship between medical history and today's health care system.



Indiana University School of Medicine psychiatry classes used the teaching amphitheater until 1956. Above, the class of 1920 listens to a lecture in the amphetheater. (Photo courtesy of Indiana Medical History Museum.)



1. See National Library of Medicine, *The New Age of Health Laboratories, 1885-1915; An Exhibit, May - October, 1987* (Bethesda, Maryland: United States Department of Health and Human Resources, 1987), 1-2; Richard Harrison Shryock, *American Medical Research* (New York: Commonwealth Fund, 1947), 60-61; Charles E. Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (New York: Basic Books, 1987), 156-57; and Harry F. Dowling, *City Hospitals: The Undercare of the Underprivileged* (Cambridge, Massachusetts: Harvard University Press, 1982), 128-29.

2. Gerald N. Grob, *Mental Illness and American Society, 1875-1940* (Princeton, New Jersey: Princeton University Press, 1983), 49-62.

3. *Ibid.*, 126-27; Gerald N. Grob, *The State and the Mentally Ill: A History of Worcester State Hospital in Massachusetts, 1830-1920* (Chapel Hill, North Carolina: University of North Carolina Press, 1966), 279.

4. Grob, *State and the Mentally Ill*, 279-83.

5. *Ibid.*, 287-88.

6. Central Indiana Hospital for the Insane, *Annual Report*, 1890, 17: "The Central Indiana Hospital for the Insane," *Indiana Medical Journal XII* (1894), 290.

7. George F. Edenharter, "History and Notes of the Central Indiana Hospital for the Insane, 1832-1915," *Annual Report*, 1915; 122.

8. *Indianapolis News*, December 19, 1896.

9. "Dedication of the Pathological Department of the Central Indiana Hospital for the Insane. . . .", *Indiana Medical Journal XV* (1897), 280; Edenharter, "History and Notes," *Annual Report*, 1915, 125.

10. *Indianapolis Sentinel*, December 19, 1896.

11. Central Indiana Hospital for the Insane, *Annual Reports*, 1896-1913; Grob, *Mental Illness and Society*, 127-28; G. Stanley Hall, "Laboratory of McLean Hospital, Somerville, Massachusetts, *American Journal of Insanity LI* (1895), 358-64; "Half-Year Summary," *American Journal of Insanity LIII* (1896), 458.

12. *Indiana Bulletin* (December 1901), 3; "The State and Its Insane," *Indiana Medical Journal XXVII* (November, 1908) 200-01.
13. Central Indiana Hospital for the Insane, *Annual Report*, 1897, 13.
14. "The Marion County Medical Society--Annual Meeting at the Central Hospital for the Insane, December 18, 1900," *Indiana Medical Journal XIX* (December 1900), 239; Central Indiana Hospital for the Insane, *Annual Report*, 1900, 26.
15. "Dedication of the Pathological Department," *Indiana Medical Journal XV*, (1897), 284.
16. *Ibid.*, 284; Morris J. Vogel, *The Invention of the Modern Hospital*, Boston, 1870-1930 (Chicago: University of Chicago Press, 1980), 76; W. D. Foster, *A Short History of Clinical Pathology* (Edinburgh: E. & S. Livingstone Ltd., 1961), 6.
17. Central Indiana Hospital for the Insane, *Annual Report*, 1901, 20.
18. "Pathology at Central Indiana Hospital for the Insane," *Indianapolis Medical Journal XII* (1909, 478); Central Indiana Hospital for the Insane, *Annual Report*, 1901, 11-16.
19. Grob, *Mental Illness and American Society*, 293.
20. *Who's Who in America: A Biographical Directory of Notable Living Men and Women*, 1950-51, 26 (Chicago: A. N. Marquis Co., 1950), 354; "Obituary: Walter Bruetsch," *Indianapolis Star*, February 4, 1977.
21. Grob, *Mental Illness and American Society*, 283-86.

AUTHOR

Katherine Mandusic McDonell holds a master's degree in history and museum studies from Case Western Reserve University. Upon completion of her graduate degree, she worked as a research historian at Conner Prairie, a living history museum north of Indianapolis. She is presently Curator/Director of the Indiana Medical History Museum and Medical Research Historian at the Indiana Historical Society. She has authored a number of articles on the history of medicine, an exhibit catalog, and most recently edited *The Journals of William A. Lindsay: An Ordinary Nineteenth-Century Physician's Surgical Cases* (Indianapolis: Indiana Historical Society, 1989).



Except for the wall stenciling and chandelier, the old Pathology Building's reception room remains unchanged. (Photo courtesy of Indiana Medical History Museum.)

THE INDIANA MEDICAL HISTORY MUSEUM

Director/Curator: Katherine Mandusic McDonell

Location: Old Pathology Building
3000 West Washington Street
Indianapolis, Indiana 46222

The museum occupies five acres of land on the grounds of Central State Hospital on the city's near westside.

By car, the museum is ten minutes from downtown, fifteen minutes from Indianapolis International Airport, and five minutes from Indiana University School of Medicine.

Telephone: (317) 635-7329

Hours: Open Wednesdays, 1 p.m. to 4 p.m. and other times by appointment.

Admission: Free

Use of collection: Open for research by appointment. Objects loaned to other museums for exhibition.



Homeopathic kits for home use, while criticized for promoting self-medication, accelerated the spread of Samuel Hahnemann's ideas in nineteenth-century America. This case occupied a prominent place in the Diller Drug Store in Springfield, Illinois. An earlier issue of Caduceus featured this photo in Frederick Karst's article on homeopathy. (Photo courtesy of The Pearson Museum.)



*Sectarian and Related Medical Systems
and the Medical Museum:
A Matter of Interpretation*

J.T.H. Connor

In two distinct and unrelated articles recently published in *Caduceus*, Frederick Karst¹ and Audrey Davis² either discussed directly, or alluded to, sectarian or "alternative" medical systems. In so doing, these authors further demonstrate that "other" forms of medical treatment constitute part of the domain of medical history and museology. Unfortunately, however, these otherwise useful discussions did not provide a sufficient or satisfying framework for historical practitioners who are interested in the possible museological context of sectarian and related medical systems.³ It is my intention, therefore, to show how a discussion of these and other related issues should be of intrinsic interest to medical museologists not only because they can be related to exhibit design and interpretation, but also because an exploration of them permits probing into aspects of the nature, purpose and philosophy of medical museums. Simply stated, I feel that by discussing sectarian and related medical systems and how they could be presented and interpreted by medical museologists, a better understanding of their role in society might be afforded. Similarly, this discussion should serve as another step toward a fuller articulation of a coherent philosophy of medical museology.

As a foundation for this discussion it is important to realize that the practice of sectarian and related medical systems was, and remains, controversial, especially in North America. For example, at a recent meeting of an Ontario medical historical group, the subject of discussion--homeopathy--was treated somewhat scornfully by its mostly medical audience, despite the fact that the speaker was a recognized European

historian of medicine.⁴ Medical journal articles and published responses to them further indicate the controversial nature of this form of medicine.⁵ Underscoring this fact are the bizarre occurrences surrounding the publication by *Nature* of one article that was believed to provide theoretical support for homeopathy.⁶ Such controversy has not been restricted to the present day; as is well-documented, homeopathy and other forms of sectarian medicine have always been contentious subjects. Reflecting both the historical and current controversy surrounding these medical systems is the plethora of terms and descriptions employed when discussing them. The following list, if not exhaustive, is representative of the extent and breadth of such terms, many of which often are used interchangeably: sectarian medicine, irregular medicine, unorthodox medicine, alternative medicine, complementary medicine, holistic medicine, fringe medicine, pseudo-medicine, marginal medicine, unlicensed practitioners, "other" practitioners, quacks, homeopaths, Eclectics, Thomsonians, botanics, naturopaths, hydropathists, water-curers, and so on.⁷ In addition to conceptual or philosophical concerns as reflected in the variety of terminology employed, this confusion becomes more complex with the realization that this issue also has cultural and geographical dimensions. For example, countries such as the United Kingdom, France and Germany today are medically pluralistic, often with government health plans for services provided by such systems as homeopathy and spas.⁸

Owing to the complex socio-medical circumstances surrounding these varied and various medical practices, caution should be exercised when attempting any generalization about them. Moreover, if any potential generalization involves the visual or artifactual presentation and/or interpretation of sectarian medicine to uninformed audiences, additional care is called for to avoid conveying an overly biased perspective. This comment might appear gratuitous, but few other medical topics are as prone to misuse or abuse resulting from the implicitly or explicitly held beliefs of the exhibit planner/organizer. For example, it is not unlikely that an individual who subscribes to the holistic medical movement might be inclined to present a homeopathic exhibit in a light wholly different from another person convinced of the infallible efficacy of "high-tech" medicine.

Less polarized scenarios can also be envisaged. Non-partisan exhibit planners might create biased presentations inadvertently if they do not subject their historical source material to thoughtful and critical evaluation, since a broad and complex historiographical framework supports our knowledge of this subject. Works written by an earlier generation of historians, or those written by "mainstream" or "orthodox" physicians, are often Whiggish or presentist in their approaches and tend either to denigrate sectarian medical

activities, or ignore their presence altogether. On the other hand, treatises prepared by adherents of a particular medical sect can express their histories in terms that are antagonistic towards "regular" medicine, or present an overly-internalist account of their subject.⁹ Finally, analyses by proponents of the "new social history"--the somewhat attenuated North American successor to the French *Annales* school of historical writing¹⁰--while offering more balanced treatments due to their evaluation of more varied documentary sources, typically are written to advance a particular argument.¹¹ The example of female midwifery illustrates how essential it is to develop a broad research base before planning any exhibit. Histories written by male obstetricians rarely mention the role of women as birth attendants;¹² works by an earlier generation of feminist writers are highly critical of the chauvinism of, and interference by, male physicians and their perceived conspiracy to oust female midwives from the birth chamber;¹³ social histories offering a less strident perspective attempt some type of rapprochement between these extremes;¹⁴ and, finally at least one recent history places considerable responsibility for changing birth practices on women themselves.¹⁵ Therefore, in order to research a topic such as sectarian or "alternative" medicine, it is essential to consult a range of sources and comprehend their arguments to avoid any unintentional bias.

Also problematical could be an exhibit sponsored by, or prepared under the auspices of, a declaredly regular medical institution such as a medical school, health agency or hospital; likewise, an exhibit underwritten by a drug or equipment manufacturer. Whether explicitly or implicitly stated, it is conceivable that under these conditions pressure could be brought to bear on curatorial personnel to produce an exhibit with a hidden agenda--perhaps something to the effect that "modern iatro-centric" medicine is good; everything else is useless or harmful. In all likelihood a deliberate attempt to interfere with exhibit design and interpretation might be objected to by exhibition planners, but more subtle approaches might prove effective. A special case of this situation might be the hospital or corporate public relations museum in which the history or development of a specific medical concept, process or product line is presented, perhaps to the exclusion, or in isolation of, analogous sectarian processes, competing products or medical systems.

The point of the discussion thus far obviously is to avoid practicing polemics and propaganda, either deliberately or inadvertently, in favor of a more balanced historical analysis presented through artifacts, documents or other forms of material culture. Having said this, however, what museological avenues are available to effect these ends? The first suggested approach, while apparently undercutting the preceding argument, is grounded in reality

in that it recognizes that compromise is often unavoidable. Simply stated: if an overly biased or one-sided presentation is inevitable, for whatever reason, it is necessary to ensure that this perspective is communicated explicitly to any audience through accompanying interpretative material or in the exhibit itself. In this way, the stated aim or objective of the exhibit is declared openly, serving the double purpose of satisfying organizers, while alerting viewers that the material presented conveys only part of the story.

A second approach might be to cast the exhibit or overall exhibition in the form of a series of questions, or one single extended question, so that an audience may decide for itself what the various merits and/or disadvantages of sectarian and related medical systems really are. Among the advantages of this approach is that the exhibition itself could be extended into a larger event through the addition of speakers or practitioners representing the various medical groups portrayed. Thus, the exhibit could be used to illustrate the historical origins of a current medical issue.¹⁶

Alternative ways to present and interpret "other" medical forms include adopting a thematic approach to their study. Developing the theme of botany and medicine, for example, would permit an examination of the history of the therapeutic role of herbs, plants and flowers across several cultures. The properties of the periwinkle and foxglove as used in medicine, the printed herbal tradition, indigenous peoples' healing agents, and Samuel Thomson's botanical system of sectarian medicine based on *lobelia* and other plants could be explained and explored more or less on common ground in a manner that is fair and representative to all.¹⁷ Similarly, pursuing the theme of water would permit exhibits on the ancient tradition of water as a healing agent, the history and role of spa therapy in both Europe and North America, hydrotherapy as a social and healing phenomenon (especially with respect to women), and the use of hydrotherapeutics in psychiatric medicine.¹⁸ Again, the emphasis is on the agent rather than on any sectarian philosophy *per se*, but some knowledge of an alternative medical approach (in this case the spa and hydrotherapy) still is conveyed to an audience.

Finally, a more abstract theme might center on "sharps," that is, any medical/surgical device that punctures or cuts. Hence the development of suturing and its technology, the hypodermic syringe, the scalpel and perhaps larger bladed instruments, bloodletting apparatus and acupuncture needles could be portrayed collectively based on the design, manufacture and construction materials of these objects. The inclusion of acupuncture needles in this potential exhibit would not be to "add charm," therefore, but would be based on the unique design and medical function of these items.

More general themes constitute the last series of suggested exhibits. Because originators and adherents of distinct medical sects often had marked identifying characteristics, it may be appropriate to cast these medical systems in specific socio-cultural geographic contexts. It would be fitting, therefore, to include homeopathic material in any exhibit that focused on the medicine of later nineteenth-century Cleveland, New Orleans or Milwaukee, for example, as these cities had well-developed homeopathic traditions due to their French and German communities. Similarly any exhibit on the medicine of New England should include information about the New Hampshire farmer, Samuel Thomson, who commercialized botanical medicine and turned it into a sectarian practice. Conversely, if an exhibit were to be chronologically oriented rather than geographically based, that is, presenting a comprehensive cross-section of medical activity at some particular time, then it could easily discuss whatever sectarian practices were being followed during the specific era.

These suggestions for the exhibition and interpretation of sectarian medicine also may be used as a springboard for a broader examination of the field of medical museology and the role of museum personnel because implicit in them are several assumptions and perhaps biases. First, is the belief that sound, professional research underlies almost every aspect of medical museology. This might appear to be another gratuitous statement, but nevertheless it is worth stating, since an exhibit, like a "period room," can be considered a "curatorial publication" and thus necessarily must be subjected to methods and standards analogous to other forms of scholarly publishing.¹⁹ As many museums are often under pressure to demonstrate increasing attendance figures, there might be the temptation to overly sacrifice historical accuracy and depth in an exhibit for a more simplistic presentation that is designed to attract a wider audience. This contention is underscored by the general museological practice of developing extensive interactive exhibits or "hands on" entertainment, in contrast to more traditional artifact-oriented exhibitions.

Second, it is important that medical museologists remain aware of the varied, if not distinct audiences attracted to their exhibitions. Accordingly, care should be taken to inform and educate audiences (perhaps in different ways), rather than merely catering to them. I raise this issue because I wonder how much "intellectual independence" or academic freedom medical museums enjoy, and am concerned further about the possibility that this form of valuable educational institution becomes merely a handmaiden to, or mouthpiece of, the organized medical profession. Given the fact that a great many medical museums have close ties to, or are affiliated with, major

mainstream medical organizations, presumably funding also flows from these sources--are there strings attached to such support? Even if external medical groups do not overtly interfere in exhibition policy, these museums by definition are primarily celebrations of modern regular medicine in that, for the most part, they are dependent on examples of orthodox medical technology.²⁰ Clearly, this potentially problematic situation is highlighted by a discussion of sectarian medicine, but its lessons may be equally applied to other contentious or controversial issues.

My final statement might strike many as being particularly irksome and unfair, but it is a belief that permeates this whole analysis, and it should therefore be declared openly. I maintain that medical museologists should avoid the fate of a related discipline--librarianship--and eschew the tendency to become "graduate technicians" who, for the most part, primarily collect, catalogue and otherwise manage the stuff of their domain. At the root of this apparently harsh comment is the notion that the typical librarian-practitioner is rarely a scholar in the world of books--a situation that perhaps stems from North American values and also its educational system.²¹ My contention, therefore, is that medical museologists could well follow a similar path if they focus their attention only on basic cataloguing and administrative issues and do not address themselves to larger research/scholarship activities in the areas of the history of medicine, technology, or material culture studies.²² A simple example of what is being asserted might be an historical examination of the material culture of homeopathy in an effort to better understand this medical system *vis-a-vis* its artifacts, and how they relate to homeopathic practice. More simply put, it is not sufficient merely to complete the registration process on a homeopathic pill case; rather *do* something with it--use it as one might use any historical manuscript. In effect, consider artifacts as "manufacts"²³ and/or practice practical history in the museum environment.²⁴

In this brief essay I have raised several real and hypothetical issues, and advanced numerous suggestions that I hope will be of interest and use to medical museological colleagues. While the unifying theme of the discussion has been an examination of sectarian and related medical systems and how they could be interpreted by museum staff, obviously broader issues have also been addressed. The full significance and merit of the loftier discussion of medical museology qua profession, practice and philosophy are of course open to scrutiny, especially in relation to the extent of the perceived problems described and their possible ramifications: Depending on the circumstances of individual institutions and personnel, the issues raised will possess varying degrees of relevancy and importance.



NOTES



1. Frederick Karst, "Homeopathy in Illinois," *Caduceus: A Museum Quarterly for the Health Sciences* 4 (Summer 1988): 1-33.

2. Audrey B. Davis, "The History of the Health Sciences at the National Museum of American History," *Caduceus: A Museum Quarterly for the Health Sciences* 4 (Summer 1988): 58-72.

3. Karst's article gave an acceptable overview of the major developments of this sectarian medical system; nevertheless, his treatment of the topic can be challenged on several grounds. Most problematic and questionable is that Karst made little attempt to relate homeopathic medicine to the potential museological interests and needs of readers. More comprehensive historical analyses of homeopathy are available and include: Lindsley Bradford, *The Pioneers of Homeopathy* (Philadelphia: Boericke and Tafel, 1897); Phillip A. Nicholls, *Homeopathy and the Medical Profession* (London: Croom Helm, 1988); William Harvey King, *History of Homeopathy and Its Institutions in America*, 4 vols. (New York: Lewis Publishing, 1905); Martin Kaufman, *Homeopathy in America: The Rise and Fall of a Medical Heresy* (Baltimore: Johns Hopkins University Press, 1971); and Harris L. Coulter, *Divided Legacy: A History of the Schism of Medical Thought*, 3 vols. (Washington: McGrath Publishing, 1973). For a slightly different historical perspective on homeopathy, see John B. Blake, "Homeopathy in America: A Commentary," *Transactions and Studies of the College of Physicians of Philadelphia* 5 (1981): 83-92. This problem of museological context was accentuated by a comment of Dr. Audrey Davis in her review of the Division of Medical Sciences of the National Museum of American History. Dr. Davis noted that the collection policy of the division emphasizes instruments and articles originating in the United States, but that foreign pieces also comprise part of the collection. Specifically, Davis commented that artifacts such as those related to acupuncture as well as certain Middle Eastern items "add charm and give balance to the collections from the scholar's point of view, and certainly lend interesting perspectives to exhibits which stress the social and cultural context of medicine, public health, pharmacy and dentistry" (see pp. 65-66). Admittedly, this brief passage constitutes only a minor portion of Davis' overall discussion, yet implicit is a notion that some might find troubling. On the one hand, Davis clearly states that these foreign objects are important for balancing the collection and strengthening certain exhibits, but on the other hand, her statement that they also "add charm" might suggest a certain professional standoffishness *vis-a-vis* their medical utility or worth. While acupuncture needles, for example, may "add charm" from a North American perspective, presumably within the context of traditional

Chinese medicine they are useful tools, and therefore are no more or less charming than a hypodermic syringe is to an occidental medical practitioner.

For information on acupuncture, see: D.C. Epler, "Bloodletting in Early Chinese Medicine and Its Relation to the Origin of Acupuncture," *Bulletin of the History of Medicine* 54 (1980): 337-67; Lu Gwei-Djen and Joseph Needham, *Celestial Lancets: A History and Rationale of Acupuncture and Moxa* (Cambridge: Cambridge University Press, 1980); and Ilza Veith, "Acupuncture in Traditional Chinese Medicine--An Historical Review," *California Medicine* 118 (1973): 152-61.

4. Meeting of the London Medical Historical Association, London, Ontario, October 6, 1987. The speaker was Professor Renate Wittern of the University of Erlangen, whose researches were based on the Samuel Hahnemann manuscript collection housed in the archives of the Robert Bosch Stiftung.

5. See, for example: Milan Korock, "Is There a Future for Homeopathy?", *Canadian Medical Association Journal* 132 (April 1, 1985): 840-49 and replies to this article in the same periodical, *Canadian Medical Association Journal* 133 (August 1, 1985): 182.

6. See E. Davenas, et al., "Human Basophil Degranulation Triggered by very Dilute Antiserum against IgE", *Nature* 333 (30 June, 1988): 816-818; and accompanying editorial entitled, "When to Believe the Unbelievable," *ibid.*, 787. Following this research article there was appended the following "editorial reservation": "Readers of this article may share the incredulity of the many referees who have commented on several revisions of it during the past several months...with the kind collaboration of Professor Benveniste, *Nature* has therefore arranged for independent investigators to observe repetitions of the experiments. A report of this investigation will appear shortly."

The report that followed was highly critical of the scientific data and procedure. See John Maddox, et al., "'High Dilution' Experiments a Delusion," *Nature* 334 (July 28, 1988): 287-90; see also the response by Dr. Jacques Benveniste, *ibid.*, 291, and letters to the editor, *ibid.*, 285-86; "When to Publish Pseudo-science," *Nature* 334 (August 4, 1988): 367; and correspondence, *ibid.*, 375-76. Further details of this "scientific circus" are available in Robert Pool, "More Squabbling over Unbelievable Result" *Science* 241 (August 5, 1988): 658, and Dr. Benveniste's reply in *Science* 241 (August 26, 1988): 1028. See also Jean-Yves Nau, "Casting Doubt over Doubters" and Frank Nouchi, "Testing Time for Laboratory," *Le Monde* (English Section) in *Manchester Guardian Weekly* 139 (August 7, 1988): 16.

7. For overviews of these various "forms" of medicine, see: Roy Wallis and Peter Morley eds., *Marginal Medicine* (London: Peter Owen, 1976); Norman Gevitz ed., *Other Healers: Unorthodox Medicine in America* (Baltimore: Johns Hopkins University Press, 1988); J. Warren Salmon ed., *Alternative Medicines: Popular and Policy Perspectives* (London: Tavistock, 1984); and Morris Fishbein, *The Medical*

Follies: An Analysis of the Foibles of Some Health Cults... (New York: Boni and Liveright, 1925).

8. While this is true, admittedly, tensions do often exist between practitioners of differing medical philosophies. See Thomas W. Maretzki and Edward Seidler, "Biomedicine and Naturopathic Healing in West Germany: A Historical and Ethnomedical View of a Stormy Relationship," *Culture, Medicine and Psychiatry* 9 (1985): 383-421.

9. See, for example, the works of Fishbein and King already cited.

10. For an introduction to these styles of historical analyses, see: Toby Gelfand, "The *Annales* and the History of Medicine (Essay Review)," *Bulletin of the History of Medicine* 55 (1981): 589-93; Gelfand, "The *Annales* and Medical Historiography, *Bilan et Perspectives*," in Roy Porter and Andrew Wear, eds., *Problems and Methods in the History of Medicine* (London: Croom Helm, 1987), 15-39; and Dale C. Mayer, "The New Social History: Implications for Archivists," *American Archivist* 48 (1985): 388-99.

11. See the works of Kaufman and Nicholls already cited.

12. For example, there is Irving S. Cutter and Henry R. Viets, *A Short History of Midwifery* (Philadelphia: W.B. Saunders, 1964) and Walter Radcliffe, *Milestones in Midwifery* (Bristol: John Wright and Sons, 1967).

13. See Barbara Ehrenreich and Deirdre English, *Witches, Midwives and Nurses: A History of Women Healers* (Old Westbury, N.Y.: Feminist Press, 1973).

14. Good examples of such works include: Jean Donnison, *Midwives and Medical Men: A History of Interprofessional Rivalries and Women's Rights* (London: Heinemann, 1977); Jane B. Donnegan, *Women and Men Midwives: Medicine, Morality, and Misogyny in Early America* (Westport: Greenwood Press, 1978); Judy Litoff, *American Midwives, 1860 to the Present* (Westport: Greenwood Press, 1978); and Richard W. Wertz and Dorothy C. Wertz, *Lying-In: A History of Childbirth in America* (New York: The Free Press, 1977).

15. Judith Walzer Leavitt, *Brought to Bed: Childbearing in America, 1750 to 1950* (New York: Oxford University Press, 1986).

16. A good example of what is being advocated is described in Paul D. Buell, "The Museum and Traditional Asian Medicine: A Study in Collaboration," *Caduceus: A Museum Quarterly for the Health Sciences* 4 (Spring 1988): 36-54.

17. The literature on plants and medicine is extensive, and can be reviewed best by consulting standard bibliographies of the history of medicine and pharmacy. Studies of Thomsonianism are less numerous, however, and include: Philip D. Jordan, "The Secret Six: An Inquiry into the Basic *Materia Medica* of the Thomsonian System of Botanic Medicine," *Ohio State Archeological and Historical Quarterly* 52 (1943): 347-55;

Alex Berman, "The Thomsonian Movement and Its Relation to American Pharmacy," *Bulletin of the History of Medicine* 25 (1951): 405-28, 519-39; Berman, "Neo-Thomsonianism in the United States," *Journal of the History of Medicine and Allied Sciences* 11 (1956): 133-55; Berman, "A Striving for Scientific Respectability: Some American Botanics and the Nineteenth-Century Plant Materia Medica," *Bulletin of the History of Medicine* 30 (1956): 7-31; Berman "Social Roots of the 19th-Century Botanico-Medical Movement in the United States," *Actes de VIII^e Congres International d'Histoire des Sciences* 2 (1956): 561-65; Jonathan Forman, "The Worthington School and Thomsonianism," *Bulletin of the History of Medicine* 21 (1947): 772-87; and William G. Rothstein, "The Botanical Movements and Orthodox Medicine," in *Other Healers*, 29-51.

18. Background material on the use of water as a therapeutic agent may be found in: Robin Price, "Hydropathy in England, 1840-70," *Medical History* 25 (1981): 269-80; Richard Metcalfe, *The Rise and Progress of Hydropathy in England and Scotland* (London: Simpkin et al., 1912); "Hydropathy in America: A Nineteenth Century Panacea," *Bulletin of the History of Medicine* 45 (1971): 267-82; Harry B. Weiss and Howard Kemble, *The Great American Water-Cure Craze: A History of Hydropathy in the United States* (Trenton, N.J.: Past Times Press, 1967); Jane B. Donegan, "Hydropathic Highway to Health": *Women and Water-Cure in Antebellum America* (New York: Greenwood, 1986); and Susan E. Cayleff, *Wash and Be Healed: The Water-Cure Movement and Women's Health* (Philadelphia: Temple University Press, 1980). Concerning hydrotherapy and psychiatry, see: Simon Baruch, *An Epitome of Hydrotherapy for Physicians, Architects and Nurses* (Philadelphia: W. B. Saunders, 1920); and Rebekah Wright, *Hydrotherapy in Psychiatric Hospitals* (Boston: Tudor Press, 1940).

19. See James M. Edmonson, "The Medical Period Room," *Caduceus: A Museum Quarterly for the Health Sciences* 3 (Winter 1987): 26-43; and J.T.H. Connor, "An Alternative Perspective: The Medical Period Room," *ibid.*, 44-48.

20. Aspects of this general issue of "sponsored history" have been analyzed with respect to broader contexts. While not all the points raised in such discussions are directly applicable, their overall arguments do have some bearing on the present article. See Michael Wallace, "Visiting the Past: History Museums in the United States," *Radical History Review* 25 (1981): 63-96; "Government-Sponsored Research: A Sanitized Past?", *The Public Historian* 10 (Summer 1988): 31-58; and also *The Public Historian* 8 (Winter 1986), an issue devoted to the ethics and responsibilities of corporate and public historians.

Perhaps an example of the tension that can exist between the policies of a corporately sponsored medical museum and historical interpretation is offered in The Bakken Museum in Minneapolis. John Senior has written that one exhibit area originally known as the "Quack Room" was later renamed the "Alternative Medicine Room," presumably reflecting a less dogmatic "regular" medical attitude to unorthodox electrical medical apparatus. Of course, a corollary to this is that visitors might misunderstand what is presented by interpreting "quack medicine" as being the same

as "alternative medicine"; presumably any accompanying interpretative information would clarify such potential misperceptions. See John E. Senior, "The Bakken: A Library and Museum of Electricity in Life," *Caduceus: A Museum Quarterly for the Health Sciences* 4 (Autumn-Winter, 1988): 74-89.

21. My foolhardiness in espousing this opinion is matched only by my belief in it. Those people who understandably might be critical of my position should read Marion Paris, *Library School Closings: Four Case Studies* (Metuchen, N.J., 1988); W. Boyd Rayward, "Research and Education for Library and Information Science: Waples in Retrospect," *Library Quarterly* 56 (1986): 348-59; and Abraham Bookstein, "Library Education in the University Setting," *ibid.*, 360-69. Also of interest is Dee Garrison, "The Tender Technicians: The Feminization of Public Librarianship, 1876-1905," *Journal of Social History* 6 (1973): 131-59.

22. Of course, this comment is not directed at those researchers who are producing quality work in the field, such as Audrey Davis, Jim Edmonson, C. J. Lawrence and so on. Indeed, the labors of these people ably demonstrate that there are important studies to be done, as well as providing excellent examples of how to proceed with such research.

23. See Wilcomb E. Washburn, "Manuscripts and Manufacts," in Thomas J. Schlereth, ed., *Material Culture Studies in America* (Nashville, AASLH, 1982), 101-105; and E. McClung Fleming, "Artifact Study: A Proposed Model," *ibid.*, 162-173.

24. Examples and discussions of practical history include: Luigi Belloni, "The Repetition of Experiments and Observations: Its Value in Studying the History of Medicine and Science," *Journal of the History of Medicine and Allied Sciences* 25 (1970): 158-67; Edwin Clarke and J.G. Bearn, "Practical History: The Role of Experimentation in Medical History" in E. Clarke, ed., *Modern Methods in the History of Medicine* (London: Athlone, 1971), 358-75; Eleri Jones and R. Elwyn Hughes, "Copper Boilers and the Occurrence of Scurvy: An Experimental Approach," *Medical History* 20 (1976): 80-81; Brian Bracegirdle, "The Performance of Seventeenth- and Eighteenth-Century Microscopes," *Medical History* 22 (1978): 187-95; Edwin Clarke and J.G. Bearn, "A Seventeenth-Century Microscope," *Medical and Biological Illustration* 17 (April 1967): 74-80; Clarke and Bearn, "The Brain Glands of Malpighi Elucidated by Practical History," *Journal of the History of Medicine and Allied Sciences* 23 (1968): 309-30.

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A Catalogue of Seventeenth-Century Printed Books in the National Library of Medicine. Compiled by Peter Krivatsy. Bethesda: National Library of Medicine, 1989. NIH Publication No. 89-2619, xiv (1315 pages). \$45.00.

The latest in the series of catalogues of pre-nineteenth-century holdings of the National Library of Medicine is an impressive work of bibliography. The 13,299 entries are arranged in alphabetical sequence from *D.A.* to *Franz van den Zype*, and comprise full names and dates of authors; title page transcriptions; imprint information; collation; and notes on physical publication details and publishing history. Pseudonyms and initialisms used by authors are cross-referenced to their full names. Likewise, authors' identities are given for works published anonymously. The catalogue includes works bound together and dissertations, as well as monographs, broadsides, pamphlets and serials. Some contents notes are given, as are references to standard bibliographies for individual titles. Engraved title pages, portraits and plates are noted.

The compiler indicates in the introduction that manual indexes of printers, publishers, and vernacular imprints are maintained at the National Library of Medicine. It would have been more convenient for users had these been published in an accompanying volume. However, searching CATLINE by place, language of publication, and printer's name is possible for those with access to the MEDLARS databases who need ready retrieval of such information.

This work is strictly a catalogue; the user will have to consult other sources to determine the historical significance of a given title. Given its magnitude, the catalog is very reasonably priced and also is available in microfiche for those libraries or individuals preferring that format. It will be invaluable to scholars of seventeenth-century science, medicine, society and printing, and essential to librarians charged with description of texts of this period.

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